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Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

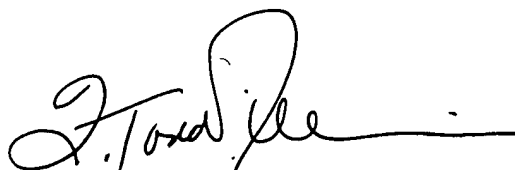
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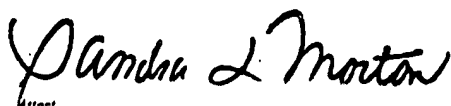
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If this application was filed prior to June 8, 1995, the term of this patent is the longer of seventeen years from the date of grant of this patent or twenty years from the earliest effective U.S. filing date of the application, subject to any statutory extension.

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US006093236A

United States Patent [19][11] **Patent Number:** **6,093,236****Klabunde et al.**[45] **Date of Patent:** **Jul. 25, 2000****[54] POROUS PELLET ADSORBENTS
FABRICATED FROM NANOCRYSTALS****[75] Inventors: Kenneth J. Klabunde; Olga Koper;
Abbas Khaleel, all of Manhattan, Kans.****[73] Assignee: Kansas State University Research
Foundation, Manhattan, Kans.****[21] Appl. No.: 09/093,249****[22] Filed: Jun. 8, 1998****Related U.S. Application Data****[63] Continuation-in-part of application No. 09/087,657, May
30, 1998, abandoned.****[51] Int. Cl.⁷ D01D 59/26****[52] U.S. Cl. 95/128; 95/133; 95/135;
95/143; 502/400; 502/414; 423/604; 423/605;
423/608; 423/610; 423/622; 423/628; 423/629;
423/632; 423/633; 423/635****[58] Field of Search 502/405, 406,
502/407, 415, 324, 325, 328, 329, 331,
335, 336, 338, 337, 340, 343, 345, 350;
264/109, 319, DIG. 25; 423/604, 605, 608,
610, 622, 628, 629, 632, 633, 635****[56] References Cited****U.S. PATENT DOCUMENTS**

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[57] ABSTRACT

Pelletized adsorbent compositions and methods of adsorbing toxic target compounds are provided for the destructive adsorption or chemisorption of toxic or undesired compounds. The pelletized adsorbents are formed by pressing together powder nanocrystalline particles comprising a metal hydroxide or a metal oxide at pressures of from about 50 psi to about 6000 psi to form discrete self-sustaining bodies. The pelletized bodies should retain at least about 25% of the surface area/unit mass and total pore volume of the starting metal particles.

13 Claims, 8 Drawing Sheets